REMARKS

By the present Amendment, claims 1-10 are cancelled and claims 10-20 are added. This leaves claims 11-20 pending in the application, with claim 11 being independent.

Substitute Specification

The specification is revised to eliminate grammatical and idiomatic errors in the originally presented specification. The number and nature of the changes made in the specification would render it difficult to consider the case and to arrange the papers for printing or copying. Thus, the substitute specification will facilitate processing of the application. The substitute specification includes no "new matter". Pursuant to M.P.E.P. § 608.01(q), voluntarily filed, substitute specifications under these circumstances should normally be accepted. A marked-up copy of the original specification is appended hereto.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Original claims 1 and 5 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. By the present Amendment, the originally filed claims are rewritten to avoid the language alleged to be indefinite in the Office Action. All language of the presently pending claims is now believed to be clear and definite. Relative to claim 1, a retaining device is recited to prevent bulging at the junction point. Relative to claim 5, the specific dimensions need not be recited since the formula for determining same is contained in the specification.

Thus, the pending claims are definite and comply with 35 U.S.C. § 112.

Rejections Under 35 U.S.C. §§102 and 103

New claim 11 is formed of as combination of original claims 1 and 6, and covers a filter element comprising a filter cylinder 1, a fluid permeable support tube 15 and a retaining device with retaining elements 23 and 25 or 31. The filter cylinder has a filter mat web arranged in a series of folds 9 adjacent to one another at least in individual areas of the filter mat web. Each fold has two radial members extending radially inwardly and connected by a crown on radially outward fold ends. The filter mat web has two web ends extending a height of the filter mat web and connected at a junction point 5 forming the filter mat web into an annular element. Two of the folds 9 are adjacent to and on opposite sides of the junction point 5. The fluid permeable support surrounds the filter cylinder. The retaining elements overlap the two of the folds adjacent the junction point on outer surfaces on the radial members of those folds remote from the junction point.

By forming the device in this manner, when fluid from the filter flows through the filter element from its interior to its exterior, the retaining device resists bulging of the two folds and separation of the ends of the filter mat web. This resistance is especially effective by the retaining device engaging the outer surfaces of the folds remote from the junction point.

Claims 1-7 and 9 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 5,622,624 to Lauer. The Lauer patent is cited for a filter element (Fig. 2) with a filter cylinder 110, a permeable filter tube 116 and a filter mat ends having folds and two connected ends 112 connected by a clamp 130 and adhesive material 122 to prevent bulging. Relative to claim 2, the filter mat ends 112 are allegedly joined along end edges which face the inside of annular element 110 with the ends facing the support tube 116. Relative to claim 3, the mat

materials are allegedly disclosed in col. 5, lines 3-15. Relative to claim 4, clamp 130 and adhesive material 122 are alleged to fuse a mat end. Relative to claim 5, the Lauer annular element 110 is alleged to be inherently reversible. Relative to claim 6, retaining device 114 allegedly has retaining elements 118 which overlap adjacent folds to prevent bulging. Relative to claim 7, the retaining elements are alleged to be in the form of projections 118 extending radially inwardly from the inside of a support tube. Relative to claim 9, retaining elements 230 (Fig. 3) are alleged to be in the form of legs of a U-shaped element.

Claims 1-5 also stand rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 4,735,720 to Kersting in view of U.S. Patent No. 5,736,045 to Bies. The Kersting patent is cited for a filter element having a filter web with a series of adjacent folds 2, 3 and two connected ends joined at a junction point to form an annular element, with the junction point encapsulated by adhesive material 9 to prevent bulging. The Bies patent is cited for a pleated filter supported by a permeable tube. In support of the rejection, it is alleged that it would be obvious to provide the Bies support tube within the Kersting filter element. Relative to claim 2, the Kersting joined section is allegedly facing the inside of the annular element so that two folds are joined at the junction point and are positioned with their crowns to the outside. Relative to claim 3, the Kersting mat is allegedly made of the claimed materials. Relative to claim 4, the Kersting connected ends allegedly form a seam fused by adhesive material 9. Relative to claim 5, the Kersting annular element is alleged to be reversible.

Claim 11 is patentably distinguishable over the cited patents, particularly by the retaining device having retaining elements overlapping the remote outer surfaces of the folds adjacent to the junction point. No engagement of a retaining device on such outer surfaces of the folds

adjacent the junction point is disclosed or rendered obvious by the cited patents, particularly the Lauer patent.

The Lauer patent discloses a filter element in FIG. 2 having a filter mat 10 with folds and ends 112 coupled by an adhesive bed 124. A shell-like clamp 130 engages the flat portions 120 of the filter mat adhered by the adhesive material 122. Specifically, the two barrier or wall-like surfaces 132 of clamp 130 overlie these flat portions 120 of the filter mat. The folds of the filter mat adjacent the flat portions 120 are located wholly outside the clamp 130 such that its barrier or wall-like surfaces 132 do not overlap on outer surfaces of such folds. Particularly, the Lauer barrier or wall-like surfaces 132 are spaced toward the joined mat ends and away from the outer surfaces of the two folds immediately adjacent the connected ends. Thus, the Lauer surfaces 132 of clamp 130 are the inner web surfaces, not the outer surfaces, as claimed.

Accordingly, claim 11 is patentably distinguishable over the cited patents.

Claims 12-20, being dependent upon claim 11, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents.

Claim 12 is further distinguishable by the ends of the mat being joined along end edges facing interiorly of the interior element and the fold crowns facing the support tube, within the overall claimed combination.

Claim 13 is further distinguishable by the mat being a metal-free, plastic-supported, filter mat, particularly within the overall claimed combination.

Claim 14 is further distinguishable by the junction point comprising a fusion seam. In contrast, the Lauer seam is an adhesive and not a fusion seam, as claimed.

Claim 15 is further distinguishable by the filter web having dimensions allowing its reversal. No disclosure of reversibility or any analysis showing that the Lauer filter element is inherently reversible is provided. Thus, the allegation that the Lauer filter mat web is reversible, as claimed, is unsupported by the evidence in the record.

Claim 16 is further distinguishable by the retaining elements comprising projections extending radially inwardly from an inner surface of the support tube. Relative to this feature, the Lauer end members 118 of expendable metal jacket 114 are cited. However, such ends are embedded in the adhesive bed 124 and appear to be spaced from filter mat flat portions 120. Thus, Lauer end member 18 does not overlap the outer surfaces of the folds adjacent the junction point, where the outer surfaces are remote from the junction point. Clearly, such end members are on the wrong side of the folds relative to the claimed subject matter.

Claim 17 is further distinguishable by the integral molding of the retaining projections on the support tube. None of the prior art is cited as disclosing or rendering obvious this feature.

Claim 18 is further distinguishable by the projection comprising a series of members spaced by interstices and arranged along the length the support tube. No such spaced members are disclosed or rendered obvious by the cited patents.

Claim 19 is further distinguishable by the retaining device being a U-shaped clamping device with its legs forming the retaining elements engaging the outer surfaces of the adjacent folds. No such retaining device is disclosed in the cited patents. Particularly, the Lauer retaining element 230 shown in FIG. 3 only engages the outer surfaces of the connected flat portions or ends 220 and not the outer surfaces of the two folds adjacent those connected portions, as required to meet the limitations of claim 19.

Claim 20 is further distinguishable by the specific relationships defining the dimensions for the reversibility of the annular element. No such relationships are disclosed or rendered by the cited patents.

The Kersting and Bies patents are also distinguished in the same manner discussed above relative to the Lauer patent. Since such patents are not applied against the subject matter of claim 6 added to the presently pending sole independent claim, the record will not be burdened with a detailed discussion of such patents.

In view of the foregoing, claims 11-20 are allowable. Prompt and favorable action is solicited.

Respectfully submitted,

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Dated: July 30, 2008